Extra expenses from programmer delays/changes (not all inclusive):

Stacks did not function properly, so it made it very difficult (and slow) for our Mac-inexperienced editors. (est. 600 hours lost time)

Rather than being able to develop all interface and design elements early on, we have had to do them piecemeal and add them on intermittently. This has caused us to lose time when updates had to interrupt other work, and in a couple of cases we have had to go back and correct inconsistencies which resulted from changes made after editorial work had been done. (est. 60 hours lost time)

All the work on booklet text was made very inefficient by the fact that how the stacks work had not yet been finalized. (est. 25 hours lost time)

We had to spend approximately three full days preparing a "diverted" demo copy of all our stacks for MacWorld, a process made necessary by the fact that the programming was all only partially complete.(est. 60 hours lost time)

We had to go ahead and do much work "by hand" rather than programatically, eg (est. 175 hours lost time):

Access updating
Hand identifying cross refs
Sound implementation

Keith and Hank had to spend time (inefficiently) on programming work just to keep things moving (est. 140 hours lost time):

Solving problems
Developing small tools
Developing safety procedures

We did not have tools which would have made our jobs more efficient. Even later in the project when we have had programmers this has been the case (eg. we just yesterday got a tool for implementing cross references, so that now we have to go back and make links which we identified and wrote down earlier instead of being able to immediately make the links). (est. 150 hours lost time)

Chunking procedure for sounds did not work correctly, so the two days Jonathan spent on that work now has to be redone. (est. 15 hours lost time)

Keith has been extensively involved in hassling over getting a programmer, figuring out what to do because we did not have a programmer. (est. 50 hours lost time)

Keith has been working with Jack to bring him up to date on things which had already been worked out with Mike (or to just help him try to figure out the function/history of some piece of code). This will continue. (est. 80 hours lost time)

Rough est. Total for hours lost 1300 to 1400 at our cost of $15.00/hour, or approximately $19,500 to $21,000.

Improvements over what Broderbund expected to get:

Graphics much better. This was due to the software we got from Bill Atkinson, and due to our decision to redo about half of the graphics which had already been done. At the time we decided to accespt the extra expense because we thought it would not put us into the red.

Sounds are much better and there are more of them. The original agreement was to just re-use the Apple sounds. Because of system problems on Apple's end this was not possible. The sounds had to be redone (and were also improved).

The editorial is much improved over the last Catalog. This is not an entirely new product, but because of the inclusion of Signal and extensive work by our editors it is genuinely tailored to this medium.

Spent to date (through 9/15)	95,227
Payments to contributors	12,000
Expected expenses to complete	10,000
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TOTAL	117,227

Programming work to do:

Get pop-up function of captions, etc. working correctly on picture cards.

Implement "Print Article" and "Print Order" functions.

Blank item for user's to send us reviews.

Verify title format (all upper case for non-review articles).

Prepare access cards so that they will accomodate an update file.

Routine for displaying Access info in a user-visible field.

Index & QuickSearch fully functional.

Full procedures for checking and optimizing stacks.

Sounds (Mike to do):

Finalize button location and functionality.
Finalize "chunking" procedure.